Title (en)

ELECTRO-MEDICAL APPARATUS

Publication

EP 0054654 B1 19860416 (DE)

Application

EP 81108434 A 19811016

Priority

DE 3047861 A 19801218

Abstract (en)

[origin: EP0054654A1] 1. A current stimulator device with an operating circuit in which an operating voltage source (UB), patient electrodes (7, 8) and a measuring device (10) for the actual value of the patient current are arranged in series, with a current waveform generator (1) comprising means for adjusting the theoretical value of the patient current, with a safety circuit (20) supplied with the theoretical value and the actual value of the patient current, and which disconnects the current stimulator device by means of a disconnecting device (30) when the patient current exceeds predetermined limit values, characterised in that : the current waveform generator (1) supplies a pulse sequence and comprises means for adjusting the theoretical values for the pulse duration (tBS) and for the pulse spacing (tPS) ; that means (21) are provided for converting the pulse-shaped patient current into an actual sequence of rectangular pulses whose duration and spacing is equal to the duration and spacing of the pulses of the patient current : that two comparators (26, 27) are provided whose output signals serve to drive the disconnection device (30) ; that the first comparator (26) compares the duration (tB) of the actual value pulses and the duration (tBS) of first control pulses and supplies an output signal if the duration (tB) of an actual value pulse is greater than the duration (tBS) of a first control pulse ; that a first timer (22) triggered by the rising flank of each actual value pulse is provided and supplies the first control pulses whose length is dependent upon the theoretical value (tBS) for the pulse duration of the patient current and is greater than the latter ; that the second comparator (27) is supplied at its input with second control pulses and reference pulses and that this comparator supplies an output signal when the duration of a second control pulse is greater than that of a reference pulse ; that a second triggerable timer (23) set by the falling flank of each actual value pulse is provided and supplies the second control pulses whose length is dependent upon the theoretical value (tPS) for the pulse interval of the patient current and is smaller than the latter ; where the length of the reference pulses is equal to the spacing between the actual value pulses and the spacing between the reference pulses is equal to the breadth of the actual value pulses.

IPC 1-7

A61N 1/08

IPC 8 full level

A61N 1/08 (2006.01)

CPC (source: EP US)

A61N 1/08 (2013.01 - EP US)

Cited by

US4719922A; EP2047885A4; FR2536286A1; EP0101513A4; KR101118026B1

Designated contracting state (EPC)

AT CH IT LI NL

DOCDB simple family (publication)

EP 0054654 A1 19820630; **EP 0054654 B1 19860416**; AT E19205 T1 19860515; DE 3047861 A1 19820715; DE 3047861 C2 19880128

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